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REMARKS

The present invention relates to an improved chemical-mechanical polishing (CMP) slurry composition. Claims 1-16 are currently pending.

Claims 1-16 are rejected under U.S.C. 35 103(a) as allegedly being unpatentable over Small *et al.* (US 2003/0162398) in view of Bringham *et al.* (6,812,193) and Sethuraman *et al.* (US 5,972,124). The Office Action states that Small *et al.* teaches an aqueous composition for CMP and a broad selection of abrasives including alumina, fumed alumina, and titania. The Office Action further stated that Small *et al.* teaches metal abrasive particles, which are catalysts, use of metal ions as catalysts, and a slurry comprising water having a pH of about 2-11. The Office Action points out that Small *et al.* fails to teach the specific quantity of metal ions as defined in applicant's claims 1, 2, 3, and 10. The Office Action relies upon Bringham *et al.* to teach a slurry for polishing metal such as tantalum, including about .001 to 5 grams/liter of metal ions such as those presented as salts of calcium, chloride ion. The Office Action asserts that, absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to include any amount of metal ions in the slurry of Small because Bringham teaches that such quantities of metal ions will enhance mechanical removal. The Office Action also notes that Small fails to teach the type of alpha particles being alpha alumina. The Office Action relies upon Sethuraman *et al.* to teach that it is conventional to use alpha alumina particles in a CMP slurry. The Office Action states that it would have been obvious to select alpha alumina particles as the type of alumina to combine with the Small slurry because the Sethuraman reference illustrates that alpha alumina is effective for CMP polishing compositions.

Applicants respectfully disagree. According to the "PTO Guidance For Examiner Treatment Of The KSR Case" issued by Deputy Commissioner Margaret A. Focarino on May 3, 2007, a §103 rejection of a claim must identify the reason why prior art should be combined. In particular, it is necessary to "identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed." The guidance of the Deputy Commissioner notes that an explicit analysis is required "in order to determine whether there was an apparent reason to combine the known [prior art] elements in the fashion claimed by the patent at issue."

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In the present case, the asserted combinations under §103 appear to be inconsistent with these guidelines, and reconsideration in light of the KSR guidance is requested. For example, in combining the teachings of Bringham *et al.* into those of Small *et al.*, the Office Action simply asserts that Bringham *et al.* teach such quantities of metal ions will enhance mechanical removal. However, Bringham *et al.* teach a slurry comprising a chloride ion and a sulfate ion. The preferred counter ion to these anions is sodium (column 4, lines 42-43). In fact, the Bringham reference demonstrates the dramatic effect of adding NaCl to a Cu polishing slurry in Table 1. They do not mention any effect of calcium in their polishing composition. Therefore, Bringham *et al.* does not teach or mention quantities of calcium, strontium, barium ions enhancing mechanical removal.

Additionally, in combining the teachings of Sethuraman *et al.* into those of Small *et al.*, the Office Action simply asserts that Sethuraman *et al.* illustrate alpha alumina is effective for CMP polishing compositions. However, Sethuraman *et al.* teach a cleaning process for substrates that have been polished with a fixed abrasive pad comprising, *inter alia*, alpha alumina. Therefore, they do not teach alpha alumina in a polishing composition as is stated in the applicants' claims, as the abrasive in a fixed abrasive pad is not part of the composition. Whatever else Sethuraman *et al.* teach, they do not teach that alpha alumina is effective for CMP polishing compositions.

The Office Action has not identified the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. For at least this reason, the applicants respectfully request the obviousness rejections of claims 1-16 be withdrawn.

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The applicants believe that the application is in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned agent.

Respectfully submitted,

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